

-3-

## Amendments to the Specification

The following paragraphs will replace all previous versions in the application.

[0003] In the context of a side impact accident, the forces generated during the accident are generally horizontal and, consequently, the protected occupant moves laterally (and rolls slightly) into the air bag and about the vehicle. Consequently, any reaction forces on the air bag tend to be generally horizontal in nature. However, in the case of a rollover accident, there may be situations in which the occupant reacts against the air bag, in a manner that would tend to lift the air bag from its deployed condition toward the roof rail. To prevent this upward motion, the prior art has devised means to lock a portion or portions of the inflated curtain, side impact air bag in place. One of the detriments of those systems that lock or latch the air bags in place is that, after the accident, it is more difficult for the occupant to lift the now-deflated curtain air bag upwardly and easily egress from the vehicle.

[0018] Reference is made to FIGURE 1, which illustrates a side impact, rollover occupant protection system 20 for use within a vehicle 22 having two or more support pillars, for example support pillars A, B (and/or C and D), designated by numerals 24, 26, 28 and 30. The vehicle 22 includes a roof rail 32 (and other elements not illustrated). The system 20 includes a side curtain/rollover air bag 40, which has one or more inflatable and connected chambers (see FIGURE 2) and an inlet 42 connected to a source of inflation gas 44, such as an air bag inflator. The inflator 44 is shown mounted on the A-pillar 24, however, this inflator 44 can be located at a convenient location close to or remote from the air bag 40. The air bag includes a plurality of anchors such as 50. As shown in FIGURE 1, the air bag includes a plurality of reinforced openings, which permit the air bag to be mounted proximate the roof rail 32. The reinforced openings can, for example, be formed by multi-layers of material or by metal or plastic rings. For example, the anchors 50 can receive a co-acting set of vehicle anchors 51, which may comprise hooks extending from the vehicle or alternatively, threaded fasteners, which extend through each opening anchor 50, to mount the air bag 40 to the vehicle 22. The air bag 40 includes a moving anchor 52, which is formed in a non-inflatable section of material 54. As can be seen in FIGURE 2, the movable anchor is formed by a triangular section of material and resembles a sail

-4-

and which functions as a tether that is external to the inflatable portions of the air bag. The movable anchor can be part of an external tether formed by, for example, a length of seat belt webbing. The moving anchor includes an opening (see FIGURE 2) in the material 54 or by a washer or strap 56 (see FIGURES 1 and 6) attached thereto. The system 20 further includes a vehicle mounted external tether guide 70 (which also acts as a force-directing mounting mechanism), which in one embodiment includes a bent rod 72 having the facility to be mounted at either of its ends. For example, the guide 70 may include mounting openings 74a and b, which can be used to secure the guide 70 to the vehicle by fasteners such as threaded bolts. As can be seen, the rod 72 extends through opening or washer 56 such that the moving anchor can slide on the ~~bar~~ rod 72. As can be appreciated, the system mechanisms, that is, the inflator, the air bag and the guide 70, prior to the accident are hidden from view such as by appropriate automotive trim panels or fascia at or near the adjacent pillars and roof rail.

[0019] Reference is made to FIGURES 1a and 1b, which show greater details of the external tether guide 70. The rod 72 includes three sections 72a, 72b and 72c (see FIGURE 1a). Sections 72a and 72b are generally mounted at a preferred angle  $\theta$  relative to the vehicle structure. In many instances section 72a can be mounted in a generally vertical orientation ( $\theta$  of about  $\pm 15-30$  degrees) which in some cases will be generally parallel to the major part of the rearmost pillar (which is formed by sheet metal). As shown, Section 72b is at an angle of 15 degrees. As can be seen, sections 72a and 72c angle away from section 72b, which is mounted at or near the level of the window sill.

[0021] As can be seen, the apex 76 of rod 72 is positioned such that when the air bag is fully inflated anchor point or anchor 52 (or opening or washer 56) is located at the apex. As is known in the art, as the air bag inflates it will tend to become shorter in the fore-aft direction. This shrinkage or foreshortening of the air bag will generate a force that extends from the front tether 84 to the rod 72. This force, as it acts through the anchor 52 and reacts against the rod 72, will tend to self center the anchor 52 at or near the apex 76. As long as the air bag remains inflated, any tendency to urge, push or otherwise move the air bag upwardly (see force F) is now resisted because of the opposing reaction forces contributed by the bent rod. More particularly, if the air bag is

-5-

lifted slightly into sections 72a or pulled down to section 72c of the rod, the reaction force acting between the opening or washer 56 and the rod 72 is resolved into a self-centering component of force, which tends to urge the anchor 52 toward the apex 72a76.

[0022] Reference is briefly made to FIGURE 1c, which shows a further embodiment of the invention. This figure shows an alternate tether guide or force-directing member 70a, which comprises a bent rod 72', which has a single bend at its apex 76. In FIGURE 2a, leg ~~72e~~ 72a is mounted generally vertically relative to the vehicle with leg ~~72a~~ 72c angling therefrom (in this embodiment leg 72b is of zero length).

[0024] Reference is made to FIGURE 3, which shows an alternative embodiment of the invention in which the front tether ~~84~~ is replaced by a the combination of second bent rod 72" received within another movable anchor 52a, which is initially positioned near the roof rail and covered by trim. As the air bag inflates the anchor 52a moves down its cooperating rod 72".